

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Application of:	)	
	)	
Mark Watson	)	Examiner: German Viana Di Prisco
	)	
Serial No.: 10/551,242	)	Group Art Unit: 2617
	)	
Filed: July 24, 2006	)	Confirmation No.: 4283
	)	
Title: Including a Hashed Service Identifier	)	
in a Paging Message for a Service Group		
Call		

**Brief on Appeal**

Honorable Director of Patents and Trademarks  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir,

This appeal is from the Examiner's final Office Action of January 22, 2011.

An appropriate Notice of Appeal was filed with the Patent and Trademark Office on April 20, 2011. Following the Panel Decision of July 8, 2011, and with a two-month extension of time, this brief is due by October 10, 2011 (October 8, 2011 being a Saturday).

**I. Real Party in Interest**

The present application is assigned to Rockstar BIDCO LP, having its principal place of business at 1285 Avenue of the Americas, New York, NY 10019-6064. Accordingly, Rockstar BIDCO LP is the real party in interest.

## **II. Related Appeals and Interferences**

There are no appeals or interferences that may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

## **III. Status of Claims**

This application was filed with claims 1 to 10. During prosecution, claims 1, 3, 4, 5, 7, 8 and 10 were amended. Claims 1 to 10 are rejected. It is the rejection of claims 1 to 10 that is appealed, and the rejected claims are set forth in the claims appendix.

## **IV. Status of Amendments**

Following the final Office Action, no response was filed. A Pre-Appeal Brief Request for Review was filed on April 20, 2011 to defend these claims. In the panel decision from the Pre-Appeal Brief Request Review, the rejection of claims 1 to 10 under 35 U.S.C. § 103 as filed on December 28, 2010, was maintained.

## **V. Summary of Claimed Subject Matter**

There are three independent claims in the application, claims 1, 5 and 8.

### **A.) Independent claim 1**

The subject matter of claim 1 is directed to:

A method of providing a service to wireless stations through a telecommunication network, the service being identified by a unique service identifier stored in the telecommunication network and in at least one subscriber station among said wireless stations, the method comprising the steps of (page 1, lines 3 to 4; page 4, lines 17 to 28; Fig. 1):

- determining a paging identifier in the telecommunications network and at said subscriber station by applying a hash function to a data string including at least part of the unique service identifier (Fig 1; page 5, lines 17 to 18; page 7, lines 1 to 2);
- associating said subscriber station with the determined paging identifier (Fig. 1; page 7, lines 1 and 2); and
- prior to transmitting information pertaining to the service over a broadcast channel, transmitting a paging message incorporating said paging identifier to the wireless stations (Fig. 1; page 2, lines 29 to 30).

According to the invention, the paging message used for reaching a group or a subgroup of UEs (user equipments) for which an MBMS (multimedia broadcast/multicast service) transmission is intended is defined in relation with a subscribed service, so that (almost) only the UEs that have a subscription for the relevant service are paged to be warned of a MBMS transmission for the service.

For this purpose, the identifier used for the paging group of the subscriber UEs incorporates data depending on the related service (page 4, lines 17 to 22). Thus, the method according to the instant invention has as a concept to provide a group identifier that is associated to the service of a user equipment having a subscription to said service in the group. Thus, in an elegant fashion, the method according to the instant invention avoids paging the wrong user equipment UEs that have no associated subscription to the particular service and thus in an optimum manner avoids a waste of resources in terms of a battery capacity and computation power. In this way, the method according to the instant invention optimally fulfills an object of the instant invention "*to reduce the processing accomplished by the idle stations and hence their power consumption*" (page 1, lines 27 and 28). The computation to obtain the paging identifier is performed both in the network and in the subscriber UE to associate that UE with the paging identifier (page 7, lines 1 and 2).

#### B.) Independent claim 5

Independent apparatus claim 5 contains features similar to the features of independent method claim 1. As a result, the summary of the claimed subject matter of independent claim 5 is

essentially the same as claim 1 above, and reference is also made to the immediately preceding paragraph for the description of claim 5.

In particular, the subject matter of claim 5 is directed to:

A telecommunication network equipment for participating in the provision of services to wireless stations, the equipment comprising (Fig. 1; page 1, lines 3 to 4; page 4, lines 17 to 28; page 2, lines 3 and 4):

- means for storing unique service identifiers respectively identifying the services (page 4, lines 24 to 28; Fig. 1);
- means for determining a respective paging identifier associated with each of the services by applying a hash function to a data string including at least part of the unique identifier for said service (Fig. 1; page 5, lines 17 to 18; page 7, lines 1 to 2); and
- means for transmitting a paging message incorporating the paging identifier associated with one of the services to the wireless stations prior to transmitting information pertaining to said one of the services over a broadcast channel (Fig. 1; page 3, lines 29 to 31).

Such network equipment allows the distribution of services to subscribed user equipment in an efficient manner as it addresses (almost) only the user equipment UEs which are in an idle-mode to wake up from the idle-mode in order to receive the subscribed service. This, because *"according to the invention, the paging group identifier defined by the UMTS network in order to inform the subscribed UEs of the start of a transmission for an associated service includes a hash code obtained from the unique service identifier by using a hash function"* (page 5, lines 11 to 14).

#### C.) Independent claim 8

Independent apparatus claim 8 contains features similar to the features of the independent method claim 1 and independent apparatus claim 5. As a result, the summary of the claimed subject matter of independent claim 8 is essentially the same as in claims 1 and 5 above, and

reference is also made to the immediately preceding two paragraphs for the description of claim 8.

In particular, the subject matter of claim 8 is directed to:

A wireless station for communicating through a telecommunications network, the wireless station comprising (page 1, lines 3 to 4; page 2, lines 3 to 4; Fig. 1):

- means for storing at least one unique service identifier identifying a respective service to which the station has a subscription (Fig. 1; page 4, line 26);
- means for determining a paging identifier, by applying a hash function to a data string including at least part of the unique service identifier (Fig. 1; page 5, lines 17 to 18; page 7, lines 1 and 2); and
- means for receiving a paging message incorporating said paging identifier and, in response thereto, switching to reception over a broadcast channel to receive information pertaining to the service as transmitted from the telecommunications network (Fig. 1; page 3, lines 29 to 30; page 7, lines 13 to 15).

As a wireless station according to the instant invention is associated with the paging identifier, practically only the wireless stations that are addressed by this paging identifier are also subscribed to the particular service, except those contacted that are subject to a collision as a consequence of the application of a hash algorithm. Consequently, an optimum use of computation and power resources in the network is guaranteed, while at the same time the user equipment that has been subscribed to particular services can be addressed in a very defined and precise manner.

## **VI. Grounds of Rejection to be Reviewed on Appeal**

There are two grounds of rejection of the claims in this application:

### **A.) Ground of Rejection I (Claims 1 to 3, 5 to 10)**

Claims 1 to 3 and 5 to 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sarkkinen (U.S. Publication No. 2003/0157949) in view of Calvignac (U.S. Patent No. 6785278).

B.) Ground of Rejection II (Claim 4)

Claim 4 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sarkkinen in view of Calvignac and further in view of Sarkkinen 212 (U.S. Publication No. 2004/0102212).

## **VII. Argument**

A.) Ground of Rejection I (Claims 1 to 3 and 5 to 10)

The Examiner has rejected claims 1 to 3 and 5 to 10 under 35 U.S.C. § 103(a) as being unpatentable over U.S. publication no. US 2003/0157949 A1 (Sarkkinen), further in view of U.S. Patent No. US 6785278 B1 (Calvignac). This rejection is respectfully traversed.

Independent claim 1 of the present invention, which is also representative of independent claims 5 and 8, reads as follows:

1. A method of providing a service to wireless stations through a telecommunication network, the service being identified by a unique service identifier stored in the telecommunication network and in at least one subscriber station among said wireless stations, the method comprising the steps of:

- determining a paging identifier in the telecommunication network and at said subscriber station, by applying a hash function to a data string including at least part of the unique service identifier;
- associating said subscriber station with the determined paging identifier; and

prior to transmitting information pertaining to the service over a broadcast channel, transmitting a paging message incorporating said paging identifier to the wireless stations.

Claims 1, 5 and 8 were rejected by the Examiner under 35 U.S.C. § 103(a) as unpatentable over Sarkkinen-949 in view of Calvignac because the Examiner argues:

*“consider claims 1, 5 and 8, Sarkkinen-949 discloses a method, means and wireless station for providing a service to wireless stations through a telecommunication network, the service being identified by a unique service identifier (multicast service announcement identification information such as a multicast service address, paragraph 46) stored in the telecommunication network (UTRAN 12 and CN 10) and in at least one subscriber station among said wireless stations (UEs 14, 16), the method comprising the steps of:”*

1.) *“determining a paging identifier in the telecommunication network and said subscriber station including a unique service identifier (the UE receives paging indicator bits with information about current and future services transmitted or to be transmitted by the network, the paging indicator bits include identification information such as a multicast service address, paragraphs 33-35 and 46);”*

2.) *“associating said subscriber station with the determined paging identifier (the first four bits paging indicator bits may indicate group identification, based on which UE is authorized to receive multicasts, see paragraphs 33, 46 and 47); and”*

3.) *“prior to transmitting information pertaining to the service over a broadcast channel, transmitting a paging message incorporating said paging identifier to the wireless stations (the UE receives paging indicator bits with information about future services to be transmitted by the network, the paging indicator bits include identification information such as a multicast service address, paragraphs 33-35 and 46)”.*

To establish prima facie obviousness, the Patent and Trademark Office must show that each and every element of the claim is taught or suggested in the combination of references. M.P.E.P. § 2143.03.

Here it is respectfully submitted that the obviousness rejection is in error for at least the following reasons:

Sarkkinen-949 does not disclose above listed feature 1.) of the instant invention. In particular Sarkkinen does not disclose

**1a):** “*determining a paging identifier in the telecommunication network by applying a hash function to a data string including at least part of the unique service identifier*”

**1b):** “*determining a paging identifier at a subscriber station by applying a hash function to a data string including at least part of the unique service identifier*”.

According to the instant invention

“*the paging group identifier defined by the UMTS network in order to inform the subscribed UEs of the start of a transmission for an associated service includes a hash code obtained from the unique service identifier by using a hash function*” (page 5 lines 11-14).

Contrary to that Sarkkinen-949 does not disclose a group identifier or, indeed, a paging identifier of such a nature at all. Sarkkinen discloses:

“*The RNC continuously sends multicast short-term service announcement in a frame over a channel such as a paging indicator channel (PICH). The mobile network is operably connected to the UTRAN through the RNC. The enhanced frame on PICH may include a type field and an indication field where the type field contains information related to the type of information in the indication field.*” (paragraph [0013] last three lines on page 1 and first three lines on page 2). For example, Fig. 5 of Sarkkinen-949 shows a diagram of the structure of a PICH frame according to a first example embodiment (Sarkkinen 949 Para [0022]. In this context Sarkkinen-949 is



completely silent regarding the paging identifier of this frame and only lists the contents of this frame, in this case having 9 bits for an indication and three bits for an indication type. Sarkkinen-949 is thus completely silent regarding the paging identifier.

Further at paragraph [0016] Sarkkinen-949 discloses

*“The RNC continuously sends multicast service announcements in a frame over a channel such as a paging indicator channel (PICH).”* (paragraph [0016] lines 6-8).

Furthermore at paragraph [0031] Sarkkinen discloses

*“A network may continuously indicate the status of the multicast service situation to the cell”* (paragraph [0031] lines 8 and 9).

From these two text passages of Sarkkinen-949 the skilled person can only learn that the paging indicator channel should address all user equipments within the cell and not just particular ones which are to receive a subscribed service. This is the case with the instant invention.

**Above all Sarkkinen does not teach the skilled person to merge the Service Identifier and the Paging Identifier.**

In addition, Sarkkinen-949 certainly does not disclose determining a paging identifier at the subscriber station. Thus, feature 1.) is not met.

Further Sarkkinen-949 does not disclose feature 2.) of the instant invention. Sarkkinen does not disclose the determination of a paging identifier according to the instant invention. Consequently Sarkkinen does not disclose to associate such an identifier to the subscriber station.

In addition, Sarkkinen-949 does not disclose feature 3.) of the instant invention. Namely,

*“prior to transmitting information pertaining to the service over a broadcast channel, transmitting a paging message”* is not disclosed by Sarkkinen.

To the contrary, Sarkkinen discloses the transmission of a multicast service announcement in a frame continuously.

*“The RNC continuously sends multicast service announcements in a frame over a channel such as a paging indicator channel (PICH).”* (paragraph [0016] lines 6-8).

“Continuously” is not “prior”. This is further supported by the disclosure of Sarkkinen-949 in which a user equipment may join a multimedia broadcast session while this is already ongoing:

*“Further, a user equipment as capable of joining to the multicast session even though the session is already going on”* (paragraph [0052] right column lines 3-5).

Consequently Sarkkinen teaches

*“after transmitting information pertaining to the service over a broadcast channel, transmitting a paging message”*, which is contrary to the claimed subject matter of the present application.

**To summarize:**

Sarkkinen-949 does not disclose features 1.) to 3.) of the instant invention listed above.

In the analysis, the Examiner has further recognized:

*“Sarkkinen-949 does not expressly disclose applying a hash function to a data string including at least part of the unique service identifier”* (page 3 lines 8 and 9).

However, the Office Action relied on Calvignac which, according to the Office Action, is in the same field of endeavor (p3,l 10) and discloses:

*“applying a hash function to a data string including at least part of the unique service identifier (Calvignac discloses that the use of a hash function in an IP routing is well-known in the art. By applying a hash function to a 30 bit IP address, the number of bits is reduced) (see column 1, II lines 17-26).*

*Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to apply a hash function as disclosed by Calvignac to the data string including at least part of the unique service identifier” (page 3 lines 10-16).*

Sarkkinen and Calvignac are not in the same field of endeavor. Whereas Sarkkinen is directed to *A Multicast Service Announcement In A Cell*, Calvignac is directed to *Hashing Address Values*. In fact those fields have nothing in common.

A problem with the citation of Calvignac is that if, hypothetically, the teachings of Calvignac were to be combined with Sarkkinen-949, then a hash function would be applied to an identifier of a frame transmitted on a paging indicator channel, e.g., the frame number of any of the frames shown in Figures 5 to 9. However, as explained above when discussing the disclosure of Sarkkinen-949, the paging identifier according to Sarkkinen is in no way disclosed to be related to the service identifier.

At this location (column 1, lines 17-26). Calvignac discloses:

*“This 32 bit address may be mapped to labels (number with fewer bits than the address) so as to increase the speed with which the next address in the route or the other address-based determination may be made. Thus the 32 bit address may for example, be hashed to 16 bits which are then associated with routing rules.”*

Consequently Calvignac merely discloses mapping routing addresses to shorter routing addresses in form of hash routing addresses in a router. However, Calvignac cannot be interpreted to disclose feature **1b)** of the instant invention. Calvignac in no way discloses applying a hash function to a data string including at least part of the unique service identifier at the subscriber station. In fact, Calvignac does not disclose any hash activity at the subscriber station.

Consequently if the teachings of Calvignac and Sarkkinen-949 were to be combined, they would not lead to

*“applying a hash function to a data string including at least part of the unique identifier for said service”*

as in feature 2.) of the instant invention. Moreover, Calvignac certainly does not disclose the application of a hash function

*“by applying a hash function to a data string including at least part of the unique service identifier”* at the subscriber station.

Moreover, Sarkkinen 949 does not disclose feature **1a)** of the instant invention, namely, determining a paging identifier in the telecommunication network including the unique service identifier. At paragraph [0046] cited by the Examiner Sarkkinen teaches *“This identification information”* (here referring to the multicast service announcement of the previous line)

*“may consist of a service identification, group identification, serial number of the service in a list, an offset value, multicast service address, or some other information”*.  
(emphasis added).

Consequently Sarkkinen-949 explicitly lists the group identification and the service identification as two separate data entities of the multicast service announcement identification information. Out of these separate data entities the skilled person would associate the paging identifier with the group identification. Thus Sarkkinen-949 does not teach above feature 1a) of

the instant invention but explicitly teaches the skilled person away from this feature in stating that the service identification and the group identification are two separate data entities. This contravenes the claim language of the instant invention which explicitly states that the paging identifier includes at least part of the unique service identifier.

Therefore, Sarkkinen-949 does not teach feature **1a)** of the instant invention and, in fact, teaches away from feature **1a)**.

In view of the foregoing, it is respectfully submitted that claim 1 is non-obvious over Sarkkinen-949 in view of Calvignac.

Independent claims 5 and 8 parallel the features of independent claim 1 and thus are allowable over the cited references for similar reasons. Therefore, it is respectfully requested that the obviousness rejections of these claims be reversed.

B.) Ground of Rejection II (Claim 4)

The Examiner has rejected claim 4 under 35 U.S.C. § 103(a) as unpatentable over Sarkkinen in view of Calvignac and further in view of Sarkkinen 212 (U.S. Patent Publication No. 2004/0102212). This rejection is also respectfully traversed.

It is respectfully submitted that this §103 rejection is in error for at least the following reason:

Claim 4 is dependent on claim 1. As discussed above the features of claim 1 are not disclosed by a combination of Sarkkinen-949 and Calvignac, and claim 1 is submitted to be allowable. Thus dependent claim 4, containing additional limitations, is submitted to be allowable for similar reasons as claim 1.

In summary, Sarkkinen does not disclose the following concept of the instant invention, namely, a link between the paging identifier and the subscribed service that *"the identifier used for the paging group of the subscriber UEs incorporates data depending on the related service"*

(page 4, lines 21 and 22). Thus, the paging identifier is also an indication of the subscribed service. Thus it has the double function of addressing the proper user equipment, while at the same time allowing the user equipment to identify the related server by analyzing the paging identifier. In contrast, Sarkkinen neither discloses such link nor such paging identifier for the following reasons:

According to Sarkkinen-949, *"the indication field of the PICOH frame may be used for the transmission of multicast service announcement identification information. This identification information may consist of a service identification, group identification, the serial number of the service in a list, an offset value, multicast service address or some other information"* (para. [0046]). According to Fig. 5, the indication field has 9 bits, and the indication type has 3 bits. According to Sarkkinen-949; *"PICH frame allows the transmission of 300 bits, where 288 bits are reserved for the transmission of a paging indicator (PI). The remaining 12 bits may be used to implement the present invention."* (para. [0045])."

Further, Sarkkinen-949 states: *"As noted previously, methods and systems for multicast service announcement in a cell according to the present invention may use the unused 12 bits of a 300-bit PICH frame for multicast service announcements."* (para. [0035]).

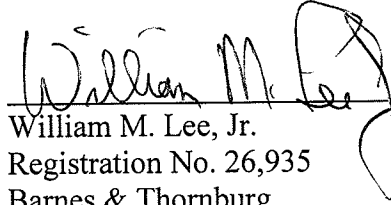
Thus, it is perfectly clear that these unused bits cannot be a paging identifier as claimed by the Examiner. This would be evident to the ordinarily skilled person, because a paging identifier needs to be used to address paged user equipment. Unused bits, however, are a different issue.

## Conclusion

The above has demonstrated that the rejections of claims 1-10 are in error and that the Examiner should be reversed. Such action is therefore solicited.

October 10, 2011

Respectfully submitted,

A handwritten signature in black ink, appearing to read "William M. Lee, Jr.", is written over a horizontal line. The signature is stylized with a large, looped "L" and a prominent "Jr." at the end.

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## Claims Appendix

1 1. (Previously Presented) A method of providing a service to wireless stations  
2 through a telecommunication network, the service being identified by a unique service  
3 identifier stored in the telecommunication network and in at least one subscriber station  
4 among said wireless stations, the method comprising the steps of:  
5 - determining a paging identifier in the telecommunication network and at said  
6 subscriber station, by applying a hash function to a data string including at  
7 least part of the unique service identifier;  
8 - associating said subscriber station with the determined paging identifier; and  
9 - prior to transmitting information pertaining to the service over a broadcast  
10 channel, transmitting a paging message incorporating said paging identifier to  
11 the wireless stations.

1 2. (Original) A method as claimed in claim 1, wherein the information pertaining to  
2 the service, transmitted over the broadcast channel, includes the unique service identifier,  
3 and wherein a wireless station associated with said paging identifier responds to the  
4 paging message by switching to the broadcast channel, receiving the transmitted unique  
5 service identifier and checking whether the received service identifier matches the service  
6 identifier stored in said wireless station.

1 3. (Previously Presented) A method as claimed in claim 1, wherein said data string  
2 further includes an indication of a type of the service.

1 4. (Previously Presented) A method as claimed in claim 1, wherein the unique  
2 service identifier includes an address associated with the service and an indication of a  
3 scope within which said address is unique.



1 5. (Previously Presented) Telecommunication network equipment for participating  
2 in the provision of services to wireless stations, the equipment comprising:  
3 - means for storing unique service identifiers respectively identifying the  
4 services;  
5 - means for determining a respective paging identifier associated with each of  
6 the services, by applying a hash function to a data string including at least part  
7 of the unique identifier for said service; and  
8 - means for transmitting a paging message incorporating the paging identifier  
9 associated with one of the services to the wireless stations, prior to  
10 transmitting information pertaining to said one of the services over a  
11 broadcast channel.

1 6. (Original) Equipment as claimed in claim 5, wherein the information pertaining to  
2 the service transmitted over the broadcast channel includes the unique service identifier.

1 7. (Previously Presented) Equipment as claimed in claim 5, wherein the data string  
2 including at least part of the unique service identifier further includes an indication of a  
3 type of the service.

1 8. (Previously Presented) A wireless station for communicating through a  
2 telecommunication network, the wireless station comprising:  
3 - means for storing at least one unique service identifier identifying a respective  
4 service to which the station has a subscription;  
5 - means for determining a paging identifier, by applying a hash function to a  
6 data string including at least part of the unique service identifier; and  
7 - means for receiving a paging message incorporating said paging identifier  
8 and, in response thereto, switching to reception over a broadcast channel to  
9 receive information pertaining to the service as transmitted from the  
10 telecommunication network.

1 9. (Original) A wireless station as claimed in claim 8, further comprising means for  
2 detecting a service identifier in the information received over the broadcast channel and  
3 means for checking whether the detected service identifier matches the stored unique  
4 service identifier.

1 10. (Previously Presented) A wireless station as claimed in claim 8, wherein said data  
2 string further includes an indication of a type of the service.

## **EVIDENCE APPENDIX**

None.

## **RELATED PROCEEDINGS APPENDIX**

None.